

IN THE CLAIMS

Please cancel claim 1.

Please add the following claims --

C³ 1. ~~41~~. A method for detecting a target polynucleotide in a sample comprising:
contacting said sample of nucleic acids with an oligonucleotide probe under conditions where said oligonucleotide probe selectively hybridizes to said target polynucleotide, said oligonucleotide probe including a fluorescent reporter molecule and a quencher molecule capable of quenching the fluorescence of said reporter molecule which are attached to said oligonucleotide probe such that said oligonucleotide probe is capable of adopting at least one single-stranded conformation when not hybridized to said target polynucleotide where said quencher molecule is fluorescent and quenches the fluorescence of said reporter molecule and is capable of adopting at least one conformation when hybridized to said target polynucleotide, where the fluorescence of said reporter molecule is unquenched such that the fluorescence intensity of said reporter molecule is greater than the fluorescence intensity of said quencher molecule when said oligonucleotide probe is hybridized to said target polynucleotide and said oligonucleotide probe is not hybridized with itself in the form of a hairpin structure; and
monitoring the fluorescence of said reporter molecule under conditions where said oligonucleotide probe does not hybridize with itself to form a hairpin structure in order to detect the hybridization of said target polynucleotide to said oligonucleotide probe.

2. ~~42~~. The method according to claim ~~41~~¹ wherein the fluorescence intensity of said reporter molecule is at least about a factor of 3.5 greater than the fluorescence intensity of said quencher molecule when said probe is hybridized to said target polynucleotide.

3. ~~43~~. The method according to claim ~~41~~¹ wherein said reporter molecule is separated from said quencher molecule by at least 15 nucleotides.

4 44. The method according to claim 41 wherein said reporter molecule is separated from said quencher molecule by between 15 and 60 nucleotides.

5 45. The method according to claim 41 wherein said reporter molecule is separated from said quencher molecule by at least 18 nucleotides.

6 46. The method according to claim 41 wherein said reporter molecule is separated from said quencher molecule by between 18 and 30 nucleotides.

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cont 7 47. A method for detecting a target polynucleotide in a sample comprising:
contacting said sample of nucleic acids with an oligonucleotide probe attached to a solid support under conditions favorable for hybridization of said oligonucleotide probe to said target polynucleotide, said oligonucleotide probe including a fluorescent reporter molecule and a quencher molecule capable of quenching the fluorescence of said reporter molecule which are attached to said oligonucleotide probe such that said oligonucleotide probe is capable of adopting at least one single-stranded conformation when not hybridized to said target polynucleotide where said quencher molecule is fluorescent and quenches the fluorescence of said reporter molecule and is capable of adopting at least one conformation when hybridized to said target polynucleotide, where the fluorescence of said reporter molecule is unquenched such that the fluorescence intensity of said reporter molecule is greater than the fluorescence intensity of said quencher molecule when said oligonucleotide probe is hybridized to said target polynucleotide and said oligonucleotide probe is not hybridized with itself in the form of a hairpin structure; and

monitoring the fluorescence of said reporter molecule under conditions where said oligonucleotide probe does not hybridize with itself to form a hairpin structure in order to detect the hybridization of said target polynucleotide to said oligonucleotide probe.

8 48. The method according to claim 47 wherein the fluorescence intensity of said reporter molecule is at least about a factor of 3.5 greater than the fluorescence

intensity of said quencher molecule when said probe is hybridized to said target polynucleotide.

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~~49~~. The method according to claim ~~47~~⁸ wherein said reporter molecule is separated from said quencher molecule by at least 15 nucleotides.

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~~50~~. The method according to claim ~~47~~⁸ wherein said reporter molecule is separated from said quencher molecule by between 15 and 60 nucleotides.

¹¹
~~51~~. The method according to claim ~~47~~⁸ wherein said reporter molecule is separated from said quencher molecule by at least 18 nucleotides.

¹²
~~52~~. The method according to claim ~~47~~⁸ wherein said reporter molecule is separated from said quencher molecule by between 18 and 30 nucleotides.

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REMARKS

The present Amendment is in response to the Examiner's Office Action mailed March 19, 1999. Claim 1-40 are canceled and new claims 41-52 are added. The section "Relationship to Copending Application" in the Specification is amended to update the status of the parent applications. Applicants also amend the Specification to delete Tables 2, 3 and 4, and submit new figures 3, 4 and 5 in order to move Table 2, 3 and 4 into Figures 3, 4 and 5, respectively.

Reconsideration of the application is respectfully requested in view of the above added claims and the following remarks. For the Examiner's convenience and reference, Applicants' remarks are presented in the order in which the corresponding issues were raised in the Office Action.

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